Fast Ethernet media converters

10Base-T/100Base-TX to 100Base-FX series

User's Manual

FCC Warning

This device has been tested and found to comply with limits for a Class A digital device, pursuant to Part 2 and Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and radiates radio frequency energy and, if not installed and used in accordance with the user's manual, may cause interference in which case user will be required to correct the interference at his own expense.

NOTICE:

1. The changes or modifications not expressively approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.

CISPR A COMPLIANCE:

This device complies with EMC directive of the European Community and meets or exceeds the following technical standard.

EN 55022 - Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. This device complies with CISPR Class A.

WARNING:

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user many be required to take adequate measures.

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Chapter 1.

Introduction

The Fast Ethernet media converters series are designed to bridge a 100Base-TX signal to a 100Base-FX signal. It's used to extend the connection distance between two Fast Ethernet Twisted-pair devices via fiber cable transparently with no performance degradation.

The converter series is base on switching hub design. It's supported Auto-negotiation & flow control function on Twisted-pair port. And provided different types of fiber connectors such as SC, ST, MT-RJ and LC for multi-mode or single-mode cables.

Product Features

- Complies with IEEE802.3u 10Base-T/100Base-TX, 100Base-FX Standards.
- TP port support Auto-MDIX & Auto-negotiation.
- TP port up to 100 meters for shielded/unshielded twisted pair cable.
- Supports Full-duplex & Half-duplex operation on TP base on Auto-negotiation.
- Switch base design support flow control capability.
- Supports Full-duplex & Half-duplex operation on fiber by slide switch.
- 100Base-FX interface for up to 5km. (Use 50/125 μm or 62.5/125 μm MMF optic cable)
- 100Base-FX interface for up to 60 km. (Single-mode 9/125 μm SMF optic cable)
- LED indicator supports.
- Multiple fiber connector supports. (SC, ST, MT-RJ, LC...etc)
- Supports fault propagation.
- Can be installed on media converter chassis.

Technical Specifications

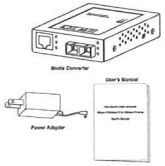
Standards	: IEEE 802.3u 10Base-T/100Base-TX and 100Base-FX
Media support	: 10BASE-T EIA/TIA 568 Cat3, 4, 5, 5e or 6 UTP/STP
	: 100Base-TX EIA/TIA 568 Cat5, 5e or 6 UTP/STP
	: 100Base-FX Multi-mode 50/125 μm & 62.5/125 μm MMF
	: 100Base-FX Single-mode 9/125 μm SMF
Distances support	: Twisted pair STP→120 meters / 393ft.
	: Multi-mode fiber: 415 meters for half-duplex.
	: Multi-mode fiber: 5km for full duplex.
	: Single-mode fiber: 415 meters for half-duplex.
	: Single-mode fiber: 60km for full duplex.
Wavelength	: 1310nm on Single/Multi-mode
Data Transfer Rate	: 100Mbps/10Mbps
LED indicators	: System - power
	: Twisted pair port – Link/Activity, Speed and FDX/Col
	: Fiber port – Link/Activity & FDX LEDs
Temperature	: 0℃ to 45℃ (Operating)
	: -20℃ to 90℃ (Storage)
Humidity	: 10% to 90% (Non-condensing)
Power consumption	: 3.4 Watts (max)
Power Requirement	: 5V DC 1A
Certifications	: FCC Class A, CE Mark
Dimensions	: 102 mm × 74 mm × 22 mm (L × W × H)
Weight	: 230g (No power adapter)

Chapter 2.

Package contents

Before you start to install the Switch, please verify your package that contains the following items:

- One media converter
- One Power Adapter
- One User's Manual



Model information

100Base-FX Multi-Mode 1310nm wavelength

Model	Description
Multimode SC Connector	100Base-FX fiber port (**SC type MMF**) Up to 415 meters (1360 ft.) for MMF 50/125um or 62.5/125um optic cables on half-duplex operation. Up to 2, 5km (1.24, **3.1** mi.) for MMF 50/125um or 62.5/125um optic cables on full-duplex operation.
Multimode ST Connector	100Base-FX fiber port (**ST type MMF**) Up to 415 meters (1360 ft.) for MMF 50/125um or 62.5/125um optic cables on half-duplex operation. Up to 2, 5km (1.24, **3.1** mi.) for MMF 50/125um or 62.5/125um optic cables on full-duplex operation.
Multimode MT-RJ Connector	100Base-FX fiber port (**MT-RJ type MMF**) Up to 415 meters (1360 ft.) for MMF 50/125um or 62.5/125um optic cables on half-duplex operation. Up to 2km (1.24 mi.) for MMF 50/125um or 62.5/125um optic cables on full-duplex operation.
Multimode LC type Connector	100Base-FX fiber port (**LC type MMF**) Up to 415 meters (1360 ft.) for MMF 50/125um or 62.5/125um optic cables on half-duplex operation. Up to 5km (**3.1** mi.) for MMF 50/125um or 62.5/125um optic cables on full-duplex operation.

100Base-FX Single-Mode 1310nm wavelength

Model	Description
Single mode SC connector	■ 100Base-FX fiber port (**SC type SMF**). ■ Up to **10, 20, 40 or 60**km for SMF 9/125um optic cables on full-duplex operation.
Single mode LC connector	■ 100Base-FX fiber port (**LC type SMF**). ■ Up to **20, 40 or 60**km for SMF 9/125um optic cables on full-duplex operation.

Chapter 3.

Installation

I. DC input & external power adapter

The external power supply adapter specification:

- AC input range from 90VAC to 260VAC.
- AC frequency range from 47Hz to 63Hz, TUV, CE, UL Safety.
- Power adapter DC output is +5VDC 1.5A
- The device DC input +5VDC 1A.

II. The TP port

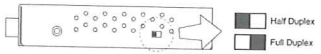
The device TP port support Auto-MDIX, Auto-negotiation and Flow control functions. The cable length up to 100 meters for shielded/unshielded twisted pair cable. Allow users connect the converter to 10BASE-T and 100BASE-TX devices.

III. The Fiber port

The converter provided different types of fiber connectors such as SC, ST, MT-RJ and LC for multi-mode or single-mode fiber cables.

Full-Duplex or Half-Duplex operation on fiber port

The converter provided slide switch at right side of converter. The purpose of the slide switch is for fiber full-duplex or half-duplex operation. The factory default is full duplex as below chart.



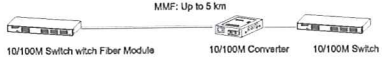
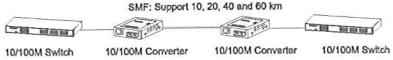
The LED indicators

LED	Color	Status	Description
Power	Yellow	On	Power on
FDX	Green	On	Full-duplex
		Off	Half-duplex
		Flashing	Partial collision occurs
10/100M	Green	On	Port is on the 100M status
		Off	Port is on the 10M status
LINK/ACT.	Yellow	On	10/100Mbps port for connection
		Flashing	10/100Mbps for data activating

Chapter 4.

Application

Multi-Mode Fiber (MMF) application



Single-Mode Fiber application